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[10191/2165]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:		: Examiner: Alina A. Boutah
	Thomas FUEHRER et al.	:
For:	METHOD AND COMMUNICATION SYSTEM FOR DATA EXCHANGE AMONG MULTIPLE USERS INTERCONNECTED OVER A BUS SYSTEM	:
Filed:	December 28, 2001	: Art Unit: 2143
Serial No.:	10/034,606	

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AARON C. DEDITCH (33,865)

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF TRANSMITTAL AND PETITION TO EXTEND

SIR:

Accompanying this Appeal Brief Transmittal is an Appeal Brief pursuant to 37 C.F.R. § 41.37 **in triplicate** as a courtesy (even though not required) for filing in the above-identified patent application.

This is also a **Petition To Extend** Under 37 C.F.R. § 1.136(a) to extend the two-month response date by **three (3) months** from the **two-month date of August 1, 2007 to November 1, 2007** (Appellants mailed a Notice Of Appeal on May 29, 2007 which was filed in the U.S.P.T.O. on June 1, 2007 so that the two-month appeal brief due date is June 1, 2007).

Please charge the appropriate fees of **$1,560.00**, which includes the Appeal Brief fee under 37 C.F.R. § 1.17(c) (which is believed to be $510.00) and the Rule 136(a) extension fee (which is believed to be $1,050.00 for a three-month extension), to Deposit Account No. **11-0600**. The Commissioner is also authorized, as necessary and/or appropriate, to charge any additional and appropriate fees, including any further Rule 136(a) extension fees, or credit any overpayment to Deposit Account No. **11-0600**. Two duplicate copies of this transmittal are enclosed for these purposes.

Respectfully submitted,

Dated: 11/1/2007

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Signature: AARON C. DEDDICH (33,865)

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Commissioner for Patents
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APPEAL BRIEF PURSUANT TO 37 C.F.R. § 41.37

SIR:

In the above-identified patent application ("the present application"), Appellants mailed a Notice Of Appeal on May 29, 2007 (which was filed on June 1, 2007) from the Final Office Action issued by the U.S. Patent and Trademark Office on February 26, 2007, so that the two-month appeal brief due date is August 1, 2007, which has been extended by three months to November 1, 2007 by the accompanying Transmittal and Petition to Extend.

In the Final Office Action, *claims 1 to 20 were finally rejected*. A Response After A Final Office Action was mailed on February 26, 2007, and an Advisory Action was mailed on May 3, 2007. It is understood for purposes of the appeal that any Amendments to date have already been entered by the Examiner, and that the Response After Final does not require entry since it included no amendments.

As to the length of the "concise explanation" of the subject matter defined in each of the claims involved in the appeal (see 41.37), the "concise explanation" language is like the "concise explanation" requirement of former Rule 37 CFR 1.192. Accordingly, the length of the concise explanation provided is therefore acceptable, since it would have been acceptable under 37 CFR 1.192 and since it specifically defines the subject matter of the independent claims involved in the appeal. In the filing of many appeal briefs under the old rule for the present Assignee , the length of the final "concise explanation" has almost always been accepted by the Patent Office.

It is therefore respectfully submitted that this Appeal Brief complies with 37 § C.F.R. 41.37. Although no longer required by the rules, this Brief is submitted in triplicate as a courtesy to the Appeals Board.

It is respectfully submitted that the final rejections of claims 1 to 20 should be reversed for the reasons set forth below.

1. REAL PARTY IN INTEREST

The real party in interest in the present appeal is Robert Bosch GmbH ("Robert Bosch") of Stuttgart in the Federal Republic of Germany. Robert Bosch is the assignee of the entire right, title and interest in the present application.

2. RELATED APPEALS AND INTERFERENCES

There are no interferences or other appeals related to the present application, which "will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal".

3. STATUS OF CLAIMS

Claims 1 to 20 are listed in the Claims Appendix.

A. Claims 1 to 20 were rejected under 35 U.S.C. § 103(a) as obvious over the combination of U.S. Patent No. 5,706,278 (the "Robillard" reference) and that which the Office Actions to date refer to as "Applicant's Admitted Prior Art" ("AAPA") (but which is only labeled "Background Information" in the present application).

Appellants therefore appeal from the final rejections of pending and considered claims 1 to 20. A copy of all of the pending and considered and appealed claims 1 to 20 is in the attached Claims Appendix.

4. STATUS OF AMENDMENTS

In response to the Final Office Action mailed on FEBRUARY 26, 2007, Appellants filed a Response After A Final Office Action (with no amendments), which was mailed on May 29, 2007.

It is understood for purposes of the appeal that any Amendments to date have already been entered by the Examiner, and that the Response After Final does not require entry since it included no amendments.

5. SUMMARY OF CLAIMED SUBJECT MATTER

The concise explanation of the summary of the claimed subject matter is as follows, as described in the context of the present application.

As to independent claims 1, 11, 12 and 15, each of the independent claims provides for exchanging data between at least two users that are interconnected over a bus system, the data being contained in messages transmitted by the users over the bus system, by (i) transmitting the data as event-oriented data over the bus system, as long as a preselectable latency elapsing between a transmission request by one of the users and an effected transmission operation of the one of the users is ensured for each message to be transmitted, as a function of a capacity utilization of the bus system; and (ii) if (that is, conditional upon that) the preselectable latency elapsing between the transmission request by the one of the users and the effected transmission operation of the one of the users is not ensured for each message to be transmitted, transmitting the data over the bus system according to a deterministic operation.

As to dependent claim 19 (which depends from claim 1) and as to dependent claim 20 (which depends from claim 11), each of these claims further provide that (a) the transmission of the data as event-oriented data and (b) the transmission of the data according to the deterministic operation are mutually exclusive.

In this regard, Figure 1 shows a communication system which includes multiple users 2, 3, 4 *interconnected by a bus system* 5 which operates on a distributed basis for exchange of data. Data to be exchanged is contained in messages transmitted by users 2, 3, 4 over bus system 5, and there is a common global time base t_gl which is synchronized to an external reference time t_ref at a preselectable time t_synch. Communication controller 8 establishes a connection between computer users 2, 3, 4 and bus system 5. *Figure 2 shows a probability distribution of latencies t_L for an event-controlled communication system. Figure 3 shows a probability distribution of latencies t_L for a deterministic communication system.* (See specification, page 11, lines 15 to 33).

As with the presently claimed subject matter of claims 1, 11, 12 and 15 (and 19 and 20), *data is transmitted by an event-oriented method* over bus system 5 if or *as long as a preselectable latency t_L can be ensured for each message to be transmitted as a function of*

utilization of capacity of bus system 5. Otherwise, the data is transmitted over bus system 5 by a deterministic method. According to the presently claimed subject matter of claims 1, 11, 12 and 15, *data transmission is switched from event-oriented transmission to deterministic transmission if a critical state is detected, i.e., a preselectable latency t_L cannot be guaranteed for each message to be transmitted.* (See specification, page 12, lines 15 to 20).

As with each of the independent claims 1, 11, 12 and 15 (and 19 and 20), Figure 5 shows that if (or conditional upon that) a critical state is detected in communication system 1, there is a switch to a deterministic data transmission. A critical state means that a preselectable latency t_L cannot be guaranteed for each message to be transmitted as a function of the utilization of capacity of the bus system. If there is no critical state, the system branches off to function block 11, and *data is still transmitted over bus system 5 by an event-controlled method. However, if a critical state is detected, the system switches to deterministic data transmission in a function block 13.* (See specification, page 12, lines 22 to 21).

A critical state of a communication system 1 occurs when all users 2, 3, 4 are attempting to transmit a message continuously. A critical state occurs when the number of messages transmitted in succession without a pause over bus system 5 exceeds a preselectable threshold. (See specification, page 13, lines 1 to 11).

*As with each of the independent claims 1, 11, 12 and 15 (and 19 and 20) (*for a deterministic data transmission, an end of the data transmission is predetermined from the beginning), *if the end of the deterministic data transmission has been reached, then communication system 1 is switched back to the event-oriented transmission,* and *if the end of the deterministic data transmission has not yet been reached, data continues to be transmitted by the deterministic method.* (See specification, page 12, lines 13 to 19).

In summary, the presently claimed subject matter of claim 1 is to a method of exchanging data between at least two users that are interconnected over a bus system, the data being contained in messages transmitted by the users over the bus system, the method including: transmitting the data as event-oriented data over the bus system, as long as a preselectable latency elapsing between a transmission request by one of the users and an

effected transmission operation of the one of the users is ensured for each message to be transmitted, as a function of a capacity utilization of the bus system; and if, and conditional upon that, the preselectable latency elapsing between the transmission request by the one of the users and the effected transmission operation of the one of the users is not ensured for each message to be transmitted, transmitting the data over the bus system according to a deterministic operation. **(See claim 1).**

In summary, the presently claimed subject matter of claim 11 is to a communication system, including: at least two users; a bus system over which the at least two users are interconnected for exchanging data among the at least two users, the data being contained in messages transmittable from the at least two users over the bus system; an arrangement for monitoring a capacity utilization of the bus system; an arrangement for performing an event-oriented transmission of the data over the bus system; an arrangement for performing a deterministic transmission of the data over the bus system; and an arrangement for selecting one of the event-oriented transmission and the deterministic transmission, in which*: the arrangement for selecting selects the event-oriented transmission, as long as a preselectable latency elapsing between a transmission request by one of the at least two users and an effected transmission operation on the part of the one of the at least two users is able to be ensured as a function of the capacity utilization of the bus system for each message to be transmitted, and the arrangement for selecting selects the deterministic transmission if, and conditional upon that, the preselectable latency elapsing between the transmission request by the one of the at least two users and the effected transmission operation of the one of the at least two users is not ensured for each message to be transmitted.* **(See claim 11).**

In summary, the presently claimed subject matter of claim 12 is to a memory element of a communication system for one of a plurality of users, the communication system being connected to at least another of the plurality of users over a bus system for an exchange of data, the memory element storing a program that is able to run on a computer of the one of the plurality of users, the program causing the computer to perform: *transmitting the data as event-oriented data over the bus system, as long as a preselectable latency elapsing between a transmission request by the one of the plurality of users and an effected transmission operation of the one of the plurality of users is ensured for each message to be transmitted,*

as a function of a capacity utilization of the bus system; and if, and conditional upon that, the preselectable latency elapsing between the transmission request by the one of the plurality of users and the effected transmission operation of the one of the plurality of users is not ensured for each message to be transmitted, transmitting the data over the bus system according to a deterministic operation. **(See claim 12).**

In summary, the presently claimed subject matter of claim 15 is to a computer-readable medium having stored thereon program instructions for causing a computer to perform: *transmitting data as event-oriented data over a bus system, as long as a preselectable latency elapsing between a transmission request by one of a plurality of users and an effected transmission operation of the one of the plurality of users is ensured for each message to be transmitted, as a function of a capacity utilization of the bus system; and if, and conditional upon that, the preselectable latency elapsing between the transmission request by the one of the plurality of users and the effected transmission operation of the one of the plurality of users is not ensured for each message to be transmitted, transmitting the data over the bus system according to a deterministic operation*. **(See claim 15).**

In summary, the presently claimed subject matter of dependent claim 19 (which depends from claim 1) further provides that (a) the transmission of the data as event-oriented data and (b) the transmission of the data according to the deterministic operation are mutually exclusive. **(See claim 19).**

In summary, the presently claimed subject matter of dependent claim 20 (which depends from claim 11) further provides that (a) the selection by the arrangement of the event-oriented transmission and (b) the selection by the arrangement of the deterministic transmission are mutually exclusive. **(See claim 20).**

Finally, the appealed claims include no step-plus-function claims, so that 41.37(v) is satisfied as to its specific requirements for such claims, since none are present here. The present application does not contain any step-plus-function claims because the method claims in the present application are not "step plus function" claims because they do not

recite "a step for", as required by the Federal Circuit and as stated in Section 2181 of the MPEP.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Whether claims 1 to 20 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of U.S. Patent No. 5,706,278 (the "Robillard" reference) and that which the Office Actions to date refer to as "Applicant's Admitted Prior Art" ("AAPA") (but which is only labeled "Background Information" in the present application).

7. ARGUMENT

A. The Rejections Under 35 U.S.C. § 103 That Claims 1 to 20 Are Obvious

CLAIMS 1 TO 18

Claims 1 to 20 were rejected under 35 U.S.C. § 103(a) as obvious over the combination of U.S. Patent No. 5,706,278 (the "Robillard" reference) and that which the Office Actions to date refer to as "Applicant's Admitted Prior Art" ("AAPA") (but which is only labeled "Background Information" in the present application).

In rejecting a claim under 35 U.S.C. § 103(a), the Office bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim features. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

Thus, to reject a claim as obvious under 35 U.S.C. § 103, the prior art must disclose or suggest each claim element and it must also suggest combining the features in the manner contemplated by the claim. (See Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 934 (Fed. Cir. 1990), cert. denied, 111 S. Ct. 296 (1990); In re Bond, 910 F.2d 831, 834 (Fed. Cir. 1990)).

Claim 1 relates to a method of exchanging data between at least two users that are interconnected over a bus system. Claim 1 provides for transmitting the data as event-oriented data ***as long as*** *a preselectable latency is ensured for each message to be transmitted*, and "*if, and* ***conditional upon*** *that, the preselectable latency . . . is not ensured for each message to be transmitted*, transmitting the data . . . according to a deterministic operation." Claims 11, 12, and 15 include subject matter like that of claim 1.

Quite simply, the Robillard reference is only time-slot based. In stark contrast, the presently claimed subject matter provides for an event oriented mode in which only a small latency occurs, and only if finite maximum latencies cannot be guaranteed for a message, then message transmission changes from an event controlled mode to a time controlled mode. This switching between modes is in no way disclosed not suggested by "Robillard", and it is also in no way disclosed nor suggested by the "Background Information" ("AAPA" as characterized by the Office Actions) of the present application (at pages 2 and 3). Switching between the event and time oriented modes guarantees the latency times. The information relied upon by the Office Actions to date only refer to one mode or the other, but disclose no system in which switching is used to ensure the latency times.

The Office Actions' focus on "and conditional upon that" is simply not understood, since it only emphases the conditional nature of "if", and therefore is wholly supported by the present application, which makes plain that if is a necessary condition. That is, if "A", then "B". This can not be plainer.

In this regard, the Office Actions to date do not explain why a person skilled in the art would not recognize these features of claim 1 -- including as a grammatical matter). The

present application makes this plain to any person having ordinary skill (or any person for that matter). As stated by the Board in Ex parte Harvey, 3 U.S.P.Q. 2d 1626, 1627 (Bd. Pat. App. Int. 1986) (emphasis added, citations omitted): *[The question] is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession of the claimed subject matter,* ***rather than the presence or absence of literal support in the specification for the claimed language.*** Likewise, as stated by the Board in Ex parte Sorenson, 3 U.S.P.Q. 2d 1462, 1463 (Bd. Pat. App. Int. 1987) (emphasis added): *[W]e are mindful that appellant's specification need not describe the claimed invention in ipsis verbis to comply with the written description requirement.*

In particular, the Sorenson Board, noting that the examiner only essentially stated that the claim expressions at issue did not "appear in the original disclosure" found that the examiner had not met his initial burden of "presenting evidence why a person having ordinary skill in the art would not recognize in appellant's specification a description of the invention defined by the claims" — and that the "only reasoning presented" that the Board could discern was an "example of *ipse dixit* reasoning, resting on a bare assertion by the Examiner".

As the Office Actions to date essentially admit, while the "Robillard" reference may refer to a combination of a time-slot allocation protocol (referred to by the Final Office Action as assertedly disclosing the deterministic operation) and a contention-based protocol (referred to by the Office as assertedly disclosing the transmission of data as event-oriented data), any review of the "Robillard" reference makes plain that the time-slot allocation protocol is used for all transmissions. It is not used if (that is to say, "conditional upon") a preselectable latency is not ensured.

In this regard, the "Robillard" reference states that a plurality of time slots are generated in which all messages are transmitted. For each node that transmits critical messages, one or more time slots are assigned to the node for transmitting the critical messages. An additional time slot is provided that is not assigned to any particular node, and during which non-critical messages of all nodes are transmitted. (Column 3, lines 36 to 62.)

Thus, the time-slot allocation protocol is used for all data transmissions, and the use of the time-slot allocation protocol is not conditional upon a preselectable latency not being ensured. Further, the contention-based protocol (referred to by the Office as assertedly disclosing the transmission of data as event-oriented data) is not used in the "Robillard" reference for "as long as a preselectable latency is ensured for each message to be transmitted," as provided for in the context of claim 1. Instead, the contention-based protocol is used in the "Robillard" reference only in a predetermined time slot. As soon as the time-slot has passed, the contention-based protocol is terminated, even if a preselectable latency is ensured for each message to be transmitted.

The Office Action asserts that the "Background Information" ("AAPA" as characterized by the Office Actions) (in particular, Applicants' Specification, page 3, line 28 to page 4, line 3) corrects these deficiencies of the "Robillard" reference because it supposedly "discloses utilizing deterministic operation in an event-oriented communication system." Final Office Action, page 3. However, as explained in Applicants' Response, dated November 16, 2006, at issue is not a deficiency in the "Robillard" reference as to a failure to disclose a combination of deterministic operation with an event-oriented communication system is not the issue. Instead, at issue are the critical deficiencies of the "Robillard" reference in its failure to disclose such a combination, where data is transmitted as event-oriented data as a function of a capacity utilization of a bus system for as long as a preselectable latency is ensured for each message to be transmitted and where the data is transmitted according to the deterministic operation conditional upon the preselectable latency not being ensured.

It is respectfully submitted that the "Background Information" ("AAPA" as characterized by the Office Actions) does not correct these deficiencies of the "Robillard" reference. The cited section of the "Background Information" ("AAPA" as characterized by the Office Actions) -- as with the "Robillard" reference -- provides for a time-controlled protocol that includes one time slot in which messages may be transmitted on an event-controlled basis. Thus, the cited section of the "Background Information" ("AAPA" as characterized by the Office Actions) only refers to a time-slot allocation protocol regardless of whether a preselectable latency is ensured.

That is, the time-slot allocation of the cited section of the "Background Information" ("AAPA" as characterized by the Office Actions) is not used "conditional upon" a preselectable latency not being ensured. Instead, ***as with the "Robillard" reference, the cited section of the "Background Information"*** ("AAPA" as characterized by the Office Actions) ***merely indicates that the time-controlled protocol is used for all transmissions and not "conditional upon that" a preselectable latency is not ensured.*** In this regard, the "Background Information" ("AAPA" as characterized by the Office Actions) states that the overall protocol is a time-controlled protocol, and that a subset of a plurality of time ranges of the time-controlled protocol is reserved for event-controlled message transmissions.

Accordingly, as the feature of "if, and conditional upon that, the preselectable latency elapsing between transmission request by the one of the users and the effected transmission operation of the one of the users is not ensured for each message to be transmitted, transmitting the data over the bus system according to a deterministic operation," as provided for in the context of claim 1, the "Background Information" ("AAPA" as characterized by the Office Actions) does not cure the critical deficiencies of the "Robillard" reference.

Further, as with the "Robillard" reference, the cited section of the "Background Information" ("AAPA" as characterized by the Office Actions) provides for termination of the event-controlled protocol as soon as an allotted time slot has passed. That is, the event-controlled protocol is not used "as long as a preselectable latency is ensured for each message to be transmitted," as provided in the context of claim 1. Instead, ***as with the "Robillard" reference, the cited section of the "Background Information"*** ("AAPA" as characterized by the Office Actions) ***provides that the event-controlled protocol is used only in a predetermined time range. As soon as the predetermined time range has passed, the event-controlled protocol is terminated, even if a preselectable latency is ensured for each message to be transmitted.***

Accordingly, as to the feature of "transmitting the data as event-oriented data over the bus system, as long as a preselectable latency elapsing between a transmission request by one of the users and an effected transmission operation of the one of the users is ensured for each message to be transmitted," as provided for in the context of claim 1, the "Background

Information" ("AAPA" as characterized by the Office Actions) does not cure the critical deficiencies of the "Robillard" reference.

The Office Actions to date assert that the "Background Information" ("AAPA" as characterized by the Office Actions), in particular Applicants' Specification, page 3, line 28 to page 4, line 3, corrects these deficiencies of the "Robillard" reference because it assertedly "discloses utilizing deterministic operation in an event-oriented communication system." Office Action, page 4.

This characterization is in no way supported by any plain reading of the cited text at pages 2 and 3 of the present application.

As to the "Robillard" reference, it does not disclose a combination of deterministic operation with an event-oriented communication system *in which data is transmitted as event-oriented data as a function of a capacity utilization of a bus system for as long as a preselectable latency is ensured for each message to be transmitted, and in which the data is transmitted according to the deterministic operation conditional upon that the preselectable latency is not ensured*, as provided for in the context of claim 1. The Office Actions to date do not properly address these critical deficiencies in the "Robillard" reference -- which are admitted to by the Office.

In the "Response to Arguments" section, the Final Office Action states that "[t]he 'event-controlled basis' in 'certain reserved time ranges' (see Specification, page 3, lines 28-32) are interpreted as the 'condition' as claimed." Final Office Action, page 11. This argument is not understood for the following reasons.

First, the condition, to which is referred (*i.e.*, that a present time is within certain reserved time ranges, is a condition for transmitting messages on an event-controlled basis) is not a condition for "transmitting the data over the bus system according to a ***deterministic*** operation." Indeed, the cited section of the "Background Information" ("AAPA" as characterized by the Office Actions) does not disclose or suggest a condition for transmitting data according to a deterministic operation.

Instead, the cited section of the "Background Information" ("AAPA" as characterized by the Office Actions) explicitly provides for use of a time-controlled protocol ***at all times*** – and this has not been refuted by any conclusory assertions of the Office Actions to date, which wholly ignore the substance of the if condition of claim 1.

The condition of the cited section of the "Background Information" ("AAPA" as characterized by the Office Actions) to which the Office refers is that a present time is within certain reserved time ranges. This condition does not disclose or suggest a condition that "the preselectable latency elapsing between the transmission request by the one of the users and the effected transmission operation of the one of the users is not ensured for each message to be transmitted."

Thus, even if satisfaction of the condition of the "Background Information" ("AAPA" as characterized by the Office Actions) to which the Office refers would have been described by the "Background Information" ("AAPA" as characterized by the Office Actions) as a prerequisite for transmitting messages according to a deterministic operation (which it has not as explained above), the cited section would still not disclose or suggest "if, and ***conditional upon that, the preselectable latency elapsing between the transmission request by the one of the users and the effected transmission operation of the one of the users is not ensured for each message to be transmitted***, transmitting the data over the bus system according to a deterministic operation," as provided for in the context of claim 1.

Thus, it is respectfully submitted that the "Background Information" ("AAPA" as characterized by the Office Actions) does not correct the critical deficiencies of the "Robillard" reference, since like "Robillard", it only refers to a time-controlled protocol that includes one time slot in which messages may be transmitted on an event-controlled basis. That is, the cited section of the "Background Information" ("AAPA" as characterized by the Office Actions) refers to a time-slot allocation protocol ***regardless of whether or not a preselectable latency is ensured***. That is, the time-slot allocation of the cited section of the "Background Information" ("AAPA" as characterized by the Office Actions) is not used "if" (that is, "conditional upon that") a preselectable latency is not ensured.

Further, like "Robillard", the cited section of the "Background Information" ("AAPA" as characterized by the Office Actions) refers to termination of the event-controlled protocol ***as soon as an allotted time slot has passed***. That is, the event-controlled protocol is not used "as long as a preselectable latency is ensured for each message to be transmitted", as required by claim 1.

Accordingly, even if the "Robillard" reference is modified to include features of the "Background Information" ("AAPA" as characterized by the Office Actions), the resulting system does not disclose or suggest all of the features recited in any of claims 1, 11, 12, and 15.

Moreover, the "problem confronted by the inventor must be considered in determining whether it would have been obvious to combine the references in order to solve the problem." (See Diversitech Corp. v. Century Steps, Inc., 850 F.2d 675, 679 (Fed. Cir. 1998)).

It is respectfully submitted that, as discussed above, the references relied on, whether taken alone or combined, do not suggest in any way modifying or combining the references so as to provide the presently claimed subject matter for addressing the problems and/or providing the benefits addressing the problem of ensuring the desired latency periods by switching between event oriented and time oriented modes, as provided for in the context of each of claims 1, 11, 12, and 15, as explained in the "Background Information" of the specification of the present application.

Accordingly, even if the "Robillard" reference is modified to include features of the "Background Information" ("AAPA" as characterized by the Office Actions), the resulting system does not disclose or suggest all of the features of claim 1.

Thus, the combination of the "Robillard" reference and the "Background Information" ("AAPA" as characterized by the Office Actions) does not disclose or even suggest all of the features of claim 1, as presented, so that claim 1 is allowable.

Claims 11, 12, and 15 include features like that of claim 1 and are therefore allowable for the same reasons as claim 1.

Claims 2 to 10, and 19 ultimately depend from claim 1 and are therefore allowable for the same reasons as claim 1. Claim 20 depends from claim 11 and is therefore allowable for the same reasons as claim 11. Claims 13 and 14 depend from claim 12 and are therefore allowable for the same reasons as claim 12. Claims 16 to 18 ultimately depend from claim 15 and are therefore allowable for the same reasons as claim 15.

CLAIMS 19 AND 20

Claims 19 and 20 respectively depend from claims 1 and 11 and are therefore allowable for the same reasons as respective base claims 1 and 11.

Claims 19 and 20 are allowable for the following further reasons:

As to dependent claim 19 (which depends from claim 1) and as to dependent claim 20 (which depends from claim 11), each of these claims further provide that (a) the transmission of the data as event-oriented data and (b) the transmission of the data according to the deterministic operation are mutually exclusive.

These features are not disclosed nor suggested by the cited text at lines 25 to 39 of column 1 of the "Robillard" reference, as any review of that text makes plain. Accordingly, claims 19 and 20 are allowable for these further reasons.

It is therefore respectfully requested that the obviousness rejections of claims 1 to 20 be withdrawn.

Accordingly, claims 1 to 20 are allowable.

More recently, the Federal Circuit in the case of In re Kotzab has made plain that even if a claim concerns a "technologically simple concept" — which is not even the case here, there still must be some finding as to the "specific understanding or principle within the knowledge of a skilled artisan" that would motivate a person having no knowledge of the claimed subject matter to "make the combination in the manner claimed", stating that:

> In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. *With this simple concept in*

> *mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab's invention to make the combination in the manner claimed.* In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper *prima facie* case of obviousness in rejecting [the] claims . . . under 35 U.S.C. Section 103(a) over Evans.

(See In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Federal Circuit 2000) (italics added)). Here again, it is believed that there have been no such findings to establish that the features discussed above of the rejected claims are met by the reference relied upon. As referred to above, any review of the reference relied upon makes plain that it simply does not describe the features discussed above of the claims as now presented.

Thus, the proper evidence of obviousness must show why there is a suggestion as to the reference so as to provide the subject matter of the claimed subject matter and its benefits.

In short, there is no evidence that the reference relied upon, whether taken alone or otherwise, would provide the features of the claims discussed above. It is therefore respectfully submitted that the claims are allowable for these reasons.

As further regards all of the obviousness rejections of the claims, it is respectfully submitted that not even a *prima facie* case has been made in the present case for obviousness, since the Office Actions to date never made any findings, such as, for example, regarding in any way whatsoever what a person having ordinary skill in the art would have been at the time the claimed subject matter of the present application was made. (See *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1455 (Fed. Cir. 1998) (the "factual predicates underlying" a *prima facie* "obviousness determination include the scope and content of the prior art, the differences between the prior art and the claimed invention, and the level of ordinary skill in the art")). It is respectfully submitted that the proper test for showing obviousness is what the "combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art", and that the Patent Office must provide particular findings in this regard — the evidence for

which does not include "broad conclusory statements standing alone". (See *In re Kotzab*, 55 U.S.P.Q. 2d 1313, 1317 (Fed. Cir. 2000) (citing *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1618 (Fed. Cir. 1999) (obviousness rejections reversed where no findings were made "concerning the identification of the relevant art", the "level of ordinary skill in the art" or "the nature of the problem to be solved"))). It is respectfully submitted that there has been no such showings by the Office Actions to date or by the Advisory Action.

In fact, the present lack of any of the required factual findings forces both Appellants and this Board to resort to unwarranted speculation to ascertain exactly what facts underly the present obviousness rejections. The law mandates that the allocation of the proof burdens requires that the Patent Office provide the factual basis for rejecting a patent application under 35 U.S.C. § 103. (See *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984) (citing *In re Warner*, 379 F.2d 1011, 1016, 154 U.S.P.Q. 173, 177 (C.C.P.A. 1967))). In short, the Examiner bears the initial burden of presenting a proper prima facie unpatentability case — which has not been met in the present case. (See *In re Oetiker*, 977 F.2d 1443, 1445, 24, U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992)).

Accordingly, claims 1 to 20 are allowable for the foregoing reasons.

CONCLUSION

In view of the above, it is respectfully requested that the rejections of the finally rejected claims 1 to 20 be reversed since these claims are allowable.

Respectfully submitted,

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CLAIMS APPENDIX

1. (Previously Presented) A method of exchanging data between at least two users that are interconnected over a bus system, the data being contained in messages transmitted by the users over the bus system, the method comprising the steps of:

transmitting the data as event-oriented data over the bus system, as long as a preselectable latency elapsing between a transmission request by one of the users and an effected transmission operation of the one of the users is ensured for each message to be transmitted, as a function of a capacity utilization of the bus system; and

if, and conditional upon that, the preselectable latency elapsing between the transmission request by the one of the users and the effected transmission operation of the one of the users is not ensured for each message to be transmitted, transmitting the data over the bus system according to a deterministic operation.

2. (Original) The method according to claim 1, further comprising the step of:

monitoring the capacity utilization over time, wherein:

the preselectable latency cannot be ensured for each message to be transmitted if an uninterrupted utilization of the bus system over time exceeds a preselectable time threshold.

3. (Original) The method according to claim 1, further comprising the step of:

monitoring the capacity utilization, wherein:

the preselectable latency cannot be ensured for each message to be transmitted if a number of messages transmitted in direct succession over the bus system exceeds a preselectable threshold.

4. (Original) The method according to claim 3, further comprising the steps of:

counting by the user the messages transmitted in direct succession from the one of the users over the bus system; and

transmitting a current number of the messages in direct succession over the bus system to others of the users.

5. (Original) The method according to claim 4, wherein:

the current number of the messages being transmitted in direct succession in one of a cyclic redundancy check and another checksum is included in a count produced by the counting to ensure a data content of one of the messages and is transmitted together with the one of the messages.

6. (Original) The method according to claim 5, further comprising the step of:

jointly forming the one of the cyclic redundancy check and the other checksum from the data content of the one of the messages and the current number of the messages being transmitted in direct succession.

7. (Original) The method according to claim 1, further comprising the step of:

switching from the deterministic operation over the bus system to an event-oriented transmission when a predetermined end of the deterministic operation is reached.

8. (Original) The method according to claim 1, further comprising the step of:

transmitting the data transmitted according to the deterministic operation in a time-triggered manner.

9. (Original) The method according to claim 8, wherein:

the time-triggered manner corresponds to a time-division multiple-access (TDMA)-based operation.

10. (Original) The method according to claim 1, further comprising the step of:

transmitting the data transmitted according to the deterministic operation with dynamically variable priorities of one of the messages and message groups on a priority shift basis.

11. (Previously Presented) A communication system, comprising:

at least two users;

a bus system over which the at least two users are interconnected for exchanging data among the at least two users, the data being contained in messages transmittable from the at least two users over the bus system;

an arrangement for monitoring a capacity utilization of the bus system;

an arrangement for performing an event-oriented transmission of the data over the bus system;

an arrangement for performing a deterministic transmission of the data over the bus system; and

an arrangement for selecting one of the event-oriented transmission and the deterministic transmission, wherein:

the arrangement for selecting selects the event-oriented transmission, as long as a preselectable latency elapsing between a transmission request by one of the at least two users and an effected transmission operation on the part of the one of the at least two users is able to be ensured as a function of the capacity utilization of the bus system for each message to be transmitted, and

the arrangement for selecting selects the deterministic transmission if, and conditional upon that, the preselectable latency elapsing between the transmission request by the one of the at least two users and the effected transmission operation of the one of the at least two users is not ensured for each message to be transmitted.

12. (Previously Presented) A memory element of a communication system for one of a plurality of users, the communication system being connected to at least another of the plurality of users over a bus system for an exchange of data, the memory element storing a program that is able to run on a computer of the one of the plurality of users, the program causing the computer to perform the steps of:

transmitting the data as event-oriented data over the bus system, as long as a preselectable latency elapsing between a transmission request by the one of the plurality of users and an effected transmission operation of the one of the plurality of users is ensured for each message to be transmitted, as a function of a capacity utilization of the bus system; and

if, and conditional upon that, the preselectable latency elapsing between the transmission request by the one of the plurality of users and the effected transmission operation of the one of the plurality of users is not ensured for each message to be transmitted, transmitting the data over the bus system according to a deterministic operation.

13. (Previously Presented) The memory element according to claim 12, wherein:

the memory element includes one of a read-only memory, a random-access memory, and a flash memory.

14. (Original) The memory element according to claim 12, wherein:

the computer includes a microprocessor.

15. (Previously Presented) A computer-readable medium having stored thereon program instructions for causing a computer to perform the steps of:

transmitting data as event-oriented data over a bus system, as long as a preselectable latency elapsing between a transmission request by one of a plurality of users and an effected transmission operation of the one of the plurality of users is ensured for each message to be transmitted, as a function of a capacity utilization of the bus system; and

if, and conditional upon that, the preselectable latency elapsing between the transmission request by the one of the plurality of users and the effected transmission operation of the one of the plurality of users is not ensured for each message to be transmitted, transmitting the data over the bus system according to a deterministic operation.

16. (Previously Presented) The computer-readable medium according to claim 15, wherein:

the computer includes a microprocessor.

17. (Previously Presented) The computer-readable medium according to claim 15, wherein:

the computer-readable medium is a memory element.

18. (Previously Presented) The computer-readable medium according to claim 17, wherein:

the memory element includes a flash memory.

19. (Previously Presented) The method according to claim 1, wherein (a) the transmission of the data as event-oriented data and (b) the transmission of the data according to the deterministic operation are mutually exclusive.

20. (Previously Presented) The communication system according to claim 11, wherein (a) the selection by the arrangement of the event-oriented transmission and (b) the selection by the arrangement of the deterministic transmission are mutually exclusive.

RELATED PROCEEDINGS INDEX

There are no interferences or other appeals related to the present application.

20. (Previously Presented) The communication system according to claim 11, wherein (a) the selection by the arrangement of the event-oriented transmission and (b) the selection by the arrangement of the deterministic transmission are mutually exclusive.